Med. J. Kagoshima Univ., Vol. 47, Suppl. 2. 121~123, November, 1995

Case Report

A Case of Primary Cerebral Lymphoma

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Summary

Patient was 61-year-old male, complaining of right hemiparesis and symptoms of increased intracranial pressure. Examination of computed tomography of the head revealed that there was a butterfly-shaped tumor occupying the white matter of the bilateral fronal lobes and right splenium corpris callosi. Histological examination of the tumor revealed diffuse proliferation of lymphoma cells with perivascular thick cuffing in the white matter. The lymphoma cells had medium-sized or large nuclei. A few nucleoli were observed in large nuclei. Some large cells had centroblast-like appearances. The other type of lymphoma cells had central-located nuclei and rich cytoplasm, revealing immunoblast-like figure. Immunohistochemically the lymphoma cells were positive for Mx-pan B and L26. There was infiltration of CD3 positive reactive small lymphocytes. A few lymphoma cells showed positive staining for IgM and κ light chain in their cytoplasm.

Diagnosis: Centroblastic lymphoma, polymorphous type, B cell type.

Key Words: malignant lymphoma, cerebrum, centroblastic lymphoma, B-cell lymphoma

Introduction

Primary central nervous system lymphomas are uncommon neoplasms. Although apparent lymphoid tissue is not present normally in the central nervous system, the cerebrum is one of the sites of primary extranodal lymphomas. Microglia is one of the candidates for the origin of primly cerebral lymphomas. Argilophilia is the common property between microglia and the primary cerebral lymphoma. However, primary lymphomas are in every way similar to systemic lymphomas derived from B and rarely T lymphocytes[1)]. In most cases lymphoma cells express B cell phenotype. Here we present a case of primary cerebral lymphoma of high grade B cell type.

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Case

A 61-year-old man admitted to the hospital because of frontal sign, right hemiparesis and symptoms of increased intracranial pressure two months earlier. Examination of computed tomography revealed that there was a butterfly-shaped tumor occupying the white matter of the bilateral frontal lobes and right splenium corpris callosi. The patient was not immunocompormised state. Partial tumorectomy and right frontal lobectomy was performed.

Histological findings

The extirpated tumor was yellowish white in color and had an elastic-hard consistency. In the low power view diffuse proliferation of lymphoma cells was noted. Thick cuffing of lymphoma cells was noted around capillaries. The lymphoma cells had medium-sized and large nuclei. Some large nuclei had a few nucleoli. Some large cells had centroblast-like appearances in Giemsa staining (Figure 1). The other type of lymphoma cells had central-located large nucleoli in the nuclei and rich cytoplasm, revealing immunoblast-like figures in Giemsa staining. Several mitotic figures were observed. There were small lymphocytes with round nuclei having condensed chromatin intermingled with the large atypical cells. The lymphoma cells had no PAS-positive intranuclear inclusion.

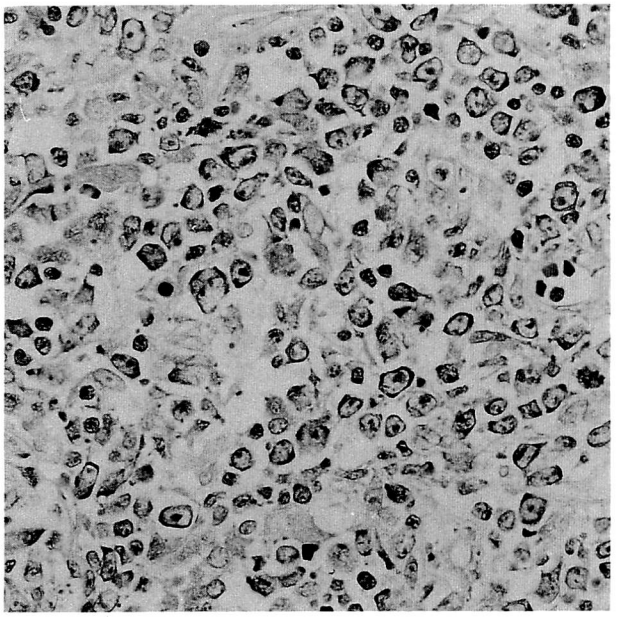

Fig. 1. Histological appearance of lymphoma cells. (Giemsa staining. Original magnification ×40)

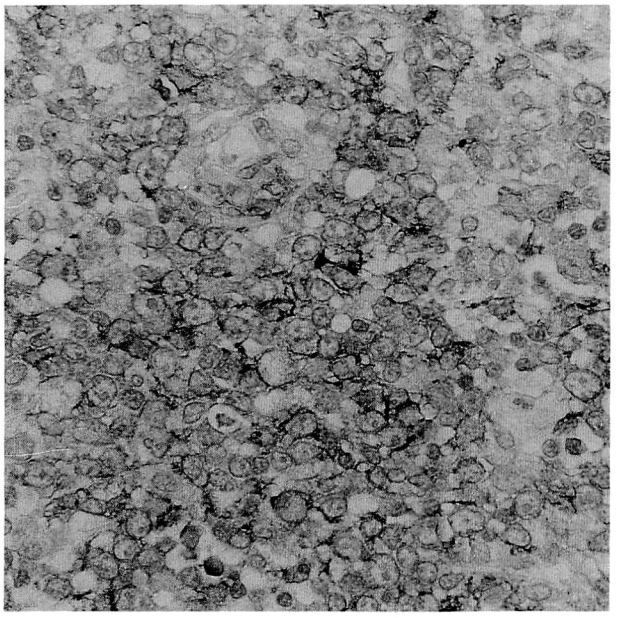

Fig. 2. Lymphoma cells are positive for B cell markers (Mx-PanB, original maginificaion ×40)

Immunohistochemistry

The large lymphoma cells and mitotic cells were positive for Mx-pan B and L26, but the small lymphocytes were negative. The small lymphocytes were positive for CD3, but negative for Mx-pan B and L26. A few lymphoma cells showed immunoglobulin κ type light chain and IgM type heavy chain in their cytoplasm, but no cells were positive for immunoglobulin λ type light chain. The large cells having round nuclei with fine chromatin distribution and rich cytoplasm were positive for KP-1.

Diagnosis

Centroblastic lymphoma, polymorphous type, B cell type.

Discussion

The incidence of cerebral lymphoma become high in patients with immunosuppressive or immunodeficiency state, including the acquired immunodeficiency syndrome (AIDS)[2] and organ transplants. The Epstein Barr virus is suggested to play a role of development of these immunodeficieny-related cerebral lymphomas[3]. Central nervous system lymphoma are increased in frequency even in nonimmunocompromised patients[4]. Our case had been healthy until bearing cerebral lymphoma. Infection of the Epstein Barr virus was not examined.

Most of the cerebral lymphomas have B cell phenotype, as observed in our case. Bergmann M and et al. described that according to the updated Kiel Classification, 13.5% of the tumors were of low grade (4 immunocytomas, 2 centroblastic-centrocytic), and 79.5% were of high grade B-cell lymphomas (26 centroblastic, 2 Burkitt-type, 3 immunoblastic, 4 unclassified).[5] Schwechehimer K et al. mentioned that predominant histological type is high grade B cell type but that many of the cases reveal pleomorphic or polymorphous subtypes and that distinct category of Kiel classification could not be found.[6]

In our case, the lymphoma cells consisted with medium-sized centrocytic cells and large centroblastic cells. Intermingled small lymphocytes were considered reactive T cells. We diagnosed as centroblastic lymphoma, polymorphic type, B cell type according to the Kiel classification.

It is widely agreed that predominant type of central nervous system lymphoma is high grade B cell type. But their histological classification and the application of the Kiel classification is still in dispute.

Acknowledgement

The authors thank to Mr. Y. Atusji and Ms. Y. Arimura for their technical assistance.

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